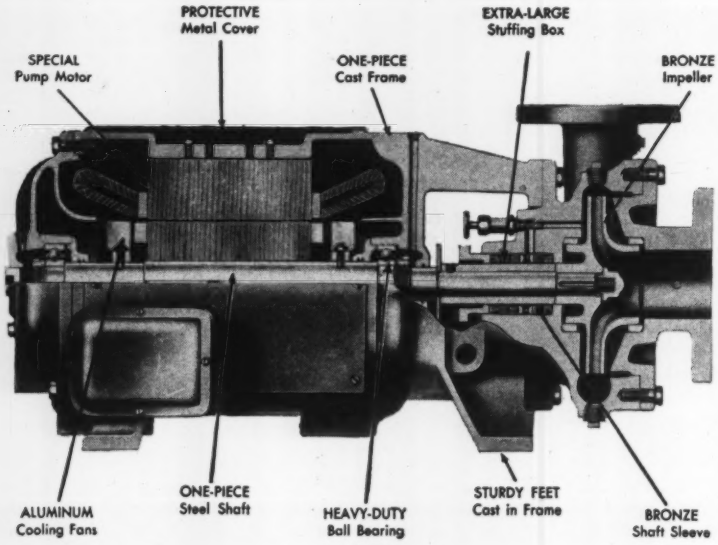
ENGINEERING NEWS-RECORD

AMERICAN SOCIETY OF CIVIL ENGINEERS
FOUNDED 1852

X-Ray View

Shows Why A-C's Smooth-Running Electrifugal Pump is the Finest of its Kind!

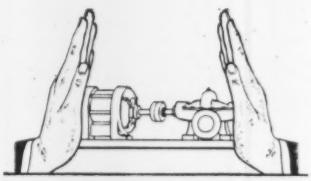


TOP QUALITY and extra value — that's what A-C's Electrifugal Pump gives you in terms of performance and economy! X-ray view above shows how Allis-Chalmers engineering has magically combined pump-and-motor into a single compact unit — which takes less space, gives you smooth operation with maximum protection against dangers of abnormal wear, leakage, corrosion, vibration! Consider these outstanding features: One-piece frame saves 33% in space; one shaft for pump-and-motor assures alignment; splash-proof motor is specially designed for pumping at low power cost. For further details on this great pump, call your nearby A-C office, or write ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

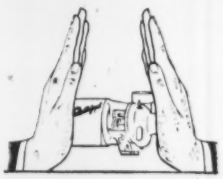
HEAR THE BOSTON SYMPHONY: *Saturday, American Broadcasting Co.*

A 1924

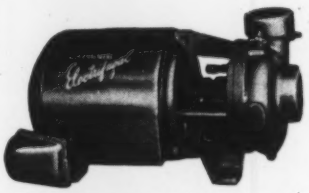
SQUEEZE PLAY CUTS SPACE 33%!



PROBLEM: Here is conventional pump and motor. How can we couple them together *better*—to save space, increase stability, and provide rigid alignment.



SOLUTION: We design a new kind of pumping unit—the one and only "Electrifugal" Pump! Motor and pump are now on one shaft—which cuts space 33%, assures alignment and smooth operation. No wonder "Electrifugals" give you more pumping power for your money!



SEA-BLUE BEAUTY: Modern design of Electrifugal Pump looks well on jobs anywhere! Capacities from 15 to 1600 gpm—heads up to 500 feet.

ALLIS-CHALMERS *Electrifugal* PUMPS

News of the Week

ENGINEERING NEWS-RECORD • JANUARY 17, 1946 • VOLUME 136 • NUMBER 3

Municipal sewage projects top FWA planning loan list

Summary of planning funds advanced by agency shows such works account for $594 million—more than third of total—Real action on control problems indicated.

Evidence of positive action on improvement of sanitation and nationwide abatement of stream pollution is revealed by the latest Federal Works Agency summary of planning loans, which shows that advances for sanitation works make up more than a third of the total volume of planned municipal works.

The FWA figures, as of Dec. 1, 1945, show that planning funds have been approved for 1,346 sewer, water and sanitation projects to cost an estimated $595 million. The total estimated cost for all other types of public works, for which the FWA has made planning money available, is $954 million, distributed among 2,249 projects.

Not the whole story

The FWA figures represent only those projects on which applications for planning aid have been approved under the provisions of Title V of the War Mobilization and Reconversion Act of 1944. It will be recalled that this provided a fund of some $17 million for advance planning of public works, funds being allocated by FWA to states and municipalities.

At the present time *Engineering News-Record* statistics reveal that proposed work in the sewage disposal field totals $1,550 million. Of this amount some 80 percent has already advanced to the stage where preparation of plans are under way. And only a portion of this is represented by projects receiving FWA planning aid.

To appreciate fully how large a backlog of sanitation work lies ahead, it may be noted that the highest year's figures on record reported by *Engineering News-Record* was $160 million in 1939. At least that much work annually for the next decade is promised on the basis of the present backlog of proposed jobs and rehabilitation needs.

The FWA report, while including such major projects as Chicago's $45,567,000 sewer expansion, rehabilitation and extension program, does not reflect the entire picture, since several states, notably Pennsylvania and New York, as well as Wisconsin, Alabama and Tennessee, have organized their own programs to provide planning aid to communities (*ENR* Sept. 6, 1945, vol. p. 301).

Nationwide sanitation trend

However, the report does include the plans of many small communities—some with populations of less than 1,000—which now seek to replace antiquated or makeshift disposal systems with more effective units.

Evidences of the strong postwar trend toward nationwide improvement of sanitation facilities has been revealed from time to time within recent months in this journal.

Among the earliest positive indications of action in this direction occurred a year ago when the state of Pennsylvania issued orders to 200 communities to install adequate sewage disposal facilities (*ENR* Feb. 15, 1945, vol. p. 228). Since then Pennsylvania has ordered several hundred additional municipalities as well as industries to cease pollution of streams, and has implemented its legal steps with the offer of financial aid for plans as well as construction of remedial works. A fund of some $4¼ million has been set aside for this purpose (*ENR* Oct. 4, 1945, vol. p. 417).

Meanwhile, other states have asserted aggressiveness, North Carolina and Washington activating pollution control groups during the summer (*ENR* July 12, 1945, vol. p. 17) and immediately proceeding to cite numerous cities and industries with warnings to correct abuses. Indiana even observed a "Stream Pollution Week"

(*Continued on page* 4)

See $8.3 billion construction in 1946

Private construction expenditures this year are expected to double those of 1945—expanding at a rate greater than any previously recorded year to reach the unprecedented figure of $5.9 billion, the Bureau of Labor Statistics of the U. S. Department of Labor reported last week.

The bureau compared its 1946 forecast with the $2.7 billion preliminary forecast it published for 1945.

New construction expenditures as a whole—for publicly financed as well as private operations, will approximate $8.3 billion—about 76 percent more than the estimated total of $4.7 billion for 1945, the bureau said. On this basis, private construction will account for nearly three-quarters of all construction activity for the year.

With this report by the labor department, three somewhat comparable estimates on the 1946 construction picture are now available. The Department of Commerce recently forecast a rise in public and private construction approximating 60 percent, and *Engineering News-Record's* Business News Department—by far the most conservative barometer—has forecast a 50 percent rise. This journal's figures have indicated a total of $4.9 billion in public and private construction for 1946.

The Labor forecast, additionally, is based on the assumption that building materials will be "in fairly good supply" by mid-1946, and that there will be no major shortage of labor during the year.

Increased expenditures for such projects as schools, hospitals, sanitation facilities, and highways will more than offset the decline in public funds spent for war production, the Bureau of Labor Statistics said.

The total construction program is expected to provide employment for about 1,600,000 workers.

Residential building, non-farm, is expected to account for $2.6 billion of the forecast total. Non-residential building, including industrial and commercial is expected to account for $1.9 billion.

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Sewage Disposal—In 1945, *Los Angeles, Calif.*, built more than 69 miles of sewers and connections, its Board of Public Works said. . . . Next major project for *Dallas, Tex.*, will be a $2,500,000 interceptor line to serve Love Field. . . . In *Puerto Rico*, the Aqueduct and Sewer Service will spend more than $5,000,000 in 1946 to take care of urgent needs. . . . *Riverside, Calif.* got work under way on a $457,454 treatment plant.

Water Supply — *Denver, Colo.*, announced it had received FWA funds to finance plans for a $9,000,000 dam and storage reservoir on the eastern slope of the Rocky Mountains to enlarge its Moffat Tunnel diversion system. . . . *Phoenix, Ariz.*, began engineering studies of a 20-year program to provide the city with an adequate supply.

Housing—The *Indiana* State Highway Department gave permission to the University of Illinois to conduct an experiment in trucking five portable houses from Charlestown to Vincennes. . . . *Akron, Ohio*, sought to obtain Quonset huts from the FPHA to solve its immediate shortage of housing while the Ohio Urban Redevelopment Commission published an estimate of 90,000 housing units as needed in the state. . . . Twelve major *Indiana* cities, reporting to the state Economic Council, said they would need 8,050 units. . . . The Houston Development Co. planned construction of 250 $5,000 to $7,000 homes at *Houston, Tex.* . . . The John Hancock Mutual Life Insurance Co. said it would build a $12,000,000 project comprising 1,200 dwellings, in *Brookline* and *West Roxbury, Mass.* . . . *Oklahoma City, Okla.*, said it would remodel barracks at Will Rogers Field as apartments.

Highways — *Mississippi* civic groups have approved a $20,000,000 farm-to-market road program over a three year period. . . . *Louisville, Ky.*, considered a $9,100,000 grade-crossing elimination program. . . . *Tampa, Fla.*, said it would have to spend $2,000,000 to put its streets in good condition. . . . *North Carolina's* State Highway Commission opened an apprentice school for machinists, carpenters and mechanics at Raleigh. . . . *St. Louis, Mo.*, sought state approval for a plan to construct an elevated approach to connect its present express highway with Market Street—main downtown thoroughfare. . . . The *Virginia* legislature considered a gubernatorial proposal that $15,000,000 be spent on school roads.

Construction — The South Carolina Power Co. will build a $2,500,000 steam plant at *Charleston, S. C.* . . . A $500,000, 766-car garage is planned for downtown *Kansas City, Mo.* . . . Victor Chemical Works will build a $2,000,000 phosphorous plant near *Tarpon Springs, Fla.* . . . *Baltimore, Md.*, reported that more than $100,000,000 will be spent on new construction and repairs and additions to existing structures during the coming year. . . . The Butler Packing Co. will build a $1,000,000 plant in *Oakland, Calif.*

Alaska barge terminal is now dismantled

Dismantling of the Alaska Barge Terminal at Excursion Inlet, Alaska, was completed Dec. 15, one month ahead of schedule, and the last of 715 German prisoners of war used as labor and 25 supervisory civilians have returned to the United States, according to an announcement at Seattle, Wash., by Col. Conrad P. Hardy, Seattle District Army Engineer.

The salvage included more than 13,000,000 b. ft. of lumber and approximately 10,000 tons of miscellaneous building materials. Lumber shipments have been made to Okinawa for reconstruction following the recent typhoons and to Hawaii, with the remainder stockpiled at Juneau, Alaska.

The prisoners of war were sent to Excursion Inlet for the dismantling last July as the only labor supply available at that time. Major A. K. Reed of Seattle was the project engineer, with Lt. James Corke of Poughkeepsie, N. Y., as his assistant. Morale among the prisoners was good at all times, Major Reed said.

Lack of nails hinders Buffalo building

Building contractors in Buffalo, N. Y., said last week that the industry there is practically at a standstill because of a shortage of nails.

Many other building supplies are short, too, but builders believe that if nails could be bought, some progress could be made while waiting for the other materials. One contractor who normally buys in carload lots has been searching in vain for a single keg.

Low ceiling prices are said to be the reason for the shortage. The price of $4 a keg for nails is so low that it is said to be no inducement to make or handle them.

Pay increases scheduled by N. C. highway dept.

Further details of the salary increases for personnel of the North Carolina Highway Department (*ENR* Jan. 10, vol. p. 16) are as follows:

Engineers given maximum salary raises of more than $300 a year include: senior bituminous engineer, from $3,000-$3,600 to $3,600-$4,200; senior chemical testing engineer, from $2,400-$3,000 to $3,000-$3,600; senior landscape engineer, from $3,000-$3,900 to $3,600-$4,500; senior materials engineer, from $2,400-$3,000 to $3,000-$4,200; senior physical testing engineer, from $2,400-$3,000 to $3,000-$3,600; and senior traffic engineer, from $3,000-$3,600 to $3,600-$4,200; junior traffic analyst, $2,400-$3,300 to $3,000-$3,900. Pay scales for associate grades range between $3,000 and $4,200.

Highway maintenance workers receiving raises of more than $15 a month included: permanent maintenance foremen, from $105-$130 to $115-$150; permanent maintenance truck drivers, from $95-$115 to $105-$135; permanent equipment depot machinists, from $140-$165 to $140-$200; semi-skilled bridgemen, from $110-$120 to $110-$140; bridge laborers, from $75-$95 to $85-$125; building construction superintendent, from $210-$250 to $210-$275; building construction foremen, from $170-$250 to $170-$275.

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American Society of Civil Engineers opens annual meeting in New York

Wesley W. Horner seated as president—Opening sessions of three-day convention see awards of honorary memberships, other honors

Election of W. W. Horner, consulting engineer of St. Louis, Mo., to the presidency of the American Society of Civil Engineers and conferring of honorary memberships on three distinguished engineers, highlighted the Jan. 16 opening of the four-day 93rd annual meeting of the society held at the Hotel Commodore, New York.

Mr. Horner, specialist in hydraulic, municipal, and sanitary engineering, took over the presidential reins from John C. Stevens, consulting engineer of Portland, Oregon.

The ASCE sessions, held at the Hotel Commodore, and attended by approximately 2,000 of the more than 20,000 members, marked the first major meeting of engineers since a year ago last January when it was decided, because of wartime travel restrictions, to cancel the annual summer convention, the spring and fall regional meetings, and local sections' conferences.

Highlight of the first day's session was the presentation of honorary memberships to Charles F. Kettering, vice president of General Motors; Boris A. Bakhmeteff, professor of civil engineering at Columbia University; and Charles H. Purcell, Sacramento, director of California's Department of Public Works and chief engineer of the San Francisco-Oakland Bay Bridge.

At the initial morning session, ten society medals and prizes were awarded, including the Norman Medal, highest of the ASCE honors, which was bestowed on Merrill Bernard, hydrologic director of the U. S. Weather Bureau, Washington D. C., for his paper on the role of meteorology in flood estimating.

Wesley W. Homer

The J. James R. Croes Medal, the society's second top-honor, was presented to George H. Hickox, senior hydraulic engineer of the Tennessee Valley Authority, Norris, Tenn., for his paper on the aeration of spillways. The Thomas Fitch Rowland Prize went to Donald N. Becker, engineer of bridge design, Department of Public Works, Chicago, for his report on the development of the Chicago-type bascule bridge.

For his paper on the Queens Midtown Tunnel, Ole Singstad, New York City consulting engineer, was presented with the James Laurie Prize. The Collingwood Prize for Juniors went to Carl E. Kindsvater, associate professor of civil engineering at Georgia School of Technology, for his work on the hydraulic jump in sloping channels.

The Rudolph Hering Medal, oldest of the ASCE division prizes, was presented to Langdon Pearse, Chicago sanitary engineer. L. Standish Hall, hydraulic engineer of the East Bay Municipal District, Oakland, Cal., received the Karl Emil Hilgard Hydraulic Prize while the J. C. Stevens Award went to Thomas R. Camp, Boston, consulting engineer.

C. Glenn Cappel of New Orleans was the recipient of the Construction Engineering Prize, and August L. Ahlf of the U. S. Bureau of Reclamation, Department of Interior, Denver, Col., received the Alfred Noble Prize.

First day's activities also included the election of two new vice presidents and six new directors. New vice presidents are: Arthur W. Harrington, Albany, N. Y., and J. T. L. McNew, College Station, Texas. New directors are: Shortridge Hardesty, New York; Irving V. A. Huie, New York; Albert Haertlein, Cambridge, Mass.; William Roy Glidden, Richmond, Va.; William M. Piatt, Durham, N. C.; and F. W. Panhorst, Sacramento, Cal.

Papers presented at the technical sessions, held Jan. 16-18, are to be reported in the Jan. 24 issue of *Engineering News-Record*.

Charles H. Purcell

Charles F. Kettering

Boris A. Bakhmeteff

Sewage planning loans

(*Continued from page* 1)

(*ENR* July 26, 1945, vol. p. 93) by gubernatorial proclamation.

More recently (*ENR* Nov. 15, 1945, vol. p. 659), Minnesota created a pollution control commission, and the Virginia legislature announced (*ENR* Jan. 10, vol. p. 18) that it was considering establishment of a commission for stream pollution abatement.

Major projects underway

Among the major sewage projects listed in the FWA report as having been granted funds for preparation of plans, in addition to the previously-mentioned Chicago work, are:

Alameda, Cal., $9,000,000; Richmond, Cal., $1,000,000; Daytona Beach, Fla., $1,270,000; Panama City, Fla., $2,000,000; East Baton Rouge, La., $2,000,000; New Haven, Conn., $3,800,000; Fall River, Mass., $1,000,000; Youngstown and Akron, Ohio, $7,600,000 (total); Anniston, Ala., $1,000,000; Cicero, Ill., $1,300,000; Louisville, Ky., $4,000,000; Wayne County, Mich., $2,414,000 and Camden, N. J., $4,000,000.

Progress pleases FWA

After listing the many projects, the FWA report noted that the U. S. Public Health Service in a recent survey reported that 13,915 of 16,572 U. S. communities needed additional sewage treatment works and facilities. "It is evident that many of these communities intend to do something about it," FWA commented.

New recreational lake seen for central Ohio

Central Ohio will get a new recreational lake six miles long with hundreds of acres of public land surrounding it as a result of the federal government's efforts to control the flood waters of the Olentangy River by completion of the Delaware flood control reservoir a few miles north of Delaware, Ohio.

The $4,307,000 project could be started in the spring and completed in three years, Army Engineers said. Approval of the $125,175,000 deficiency appropriation bill (*ENR*, Jan. 3, vol. p. 4) will release $1,000,000 of the cost of the job, and the remainder would come in new appropriations the next fiscal year. The state plans to develop the land around the lake for recreation.

Authorized in the Flood Control Act of 1938, the reservoir originally was planned with a permanent pool covering 100 acres. Under present plans an earth dam and levee 18,700 ft. long will be built to make a reservoir covering 8,700 acres when full and backing up 16 miles into Marion County. The concrete spillway will be 57 ft. high. The reservoir will have a storage capacity of 132,000 ac. ft.—equivalent of 6½ in. of "run-off".

Prizes totalling $2,000 set for welding papers

Announcement has been made of cash prizes to be awarded in 1946 by the Resistance Welder Manufacturer's Association for outstanding papers dealing with resistance welding. The total amount of the awards is $2000, and a wide choice in subject matter is allowed in order to assure eligibility to all papers which cover worthwhile and significant achievements in the field. Contest judges will be appointed by the American Welding Society, and awards will be made at the 1946 fall meeting of the society.

Papers entered should be sent to American Welding Society, 33 W. 39th St., New York 18, N. Y. If mailed to arrive not later than July 1, three copies should be furnished. If mailed to arrive in July, six copies required.

Traffic problems topic of Los Angeles clinic

A $15,000,000 subway, approximately 14 blocks long and $93,000,00 in freeways and grade separations, were construction phases of a $582,000,000 program to help solve the traffic problem of Los Angeles, Calif., recommended at a recent 3-day transportation clinic called by Mayor Fletcher Bowron.

The clinic, financed by the city council, heard reports from coast city officials and from four eastern traffic experts, Charles De Leuw, Chicago, Harold M. Lewis New York, Joe R. Long, Cincinnati, and D. Grant Mickle, Automotive Safety Council, Washington, D. C.

The subway would be built under either Broadway or Spring streets, from south of Eleventh Street, to a point north of the Civic Center, a distance of about 14 long blocks. In reality, it would be an underground downtown streetcar delivery terminal.

The subway, plus modernization of public carrier equipment, it is said would increase transport speed by ten percent. Freeways and additional parking facilities would, it was estimated, effect a comparable saving in time for automobile traffic.

Floods bring menace to many areas

Unseasonably warm weather, heavy rains, and melting snow and ice have been causing serious flash floods in about a dozen southern, midwestern and western states in the last week or more, and scenes such as this—on the Willamette River at North Eugene, Ore.—are being duplicated in many sections of the country.

While, so far, the flooded streams have by no means approached record high levels, many thousands of acres of low-lying lands have been inundated, considerable property damage has been done, hundreds are homeless or marooned by high water, and at least a score of fatalities have been reported from Kentucky, Tennessee, Illinois, Iowa, Arkansas, Georgia, and Alabama.

U. S. Army Engineers are battling the floods and Red Cross and public health nurses and many volunteers are aiding the thousands who have been driven from their homes.

Some of the rivers are receding in Tennessee and Kentucky, but torrential rains have swollen the upper Ohio River.

Trade practice meeting for equipment men

A trade practice conference for the construction equipment distributing industry, open to all members of the industry, and under the auspices of the Federal Trade Commission, will be held in the Edgewater Beach Hotel, Chicago, Ill., Jan. 31, beginning at 2:30 p. m. Commissioner Lowell B. Mason will preside.

Purpose of the conference is to afford an opportunity to cooperate in the establishment, subject to the commission's approval, of comprehensive fair trade practice rules designed to prevent unfair methods of competition and other trade abuses deemed harmful to the industry and to purchasers. It has been authorized by the commission at the request of, and in cooperation with, members of the industry in accordance with the purpose of promoting fair competitive conditions and protection of the public interest.

Colorado River water allocation is studied

Allocation of the waters of the Colorado River of Texas between river authorities and private interests within its basin is being studied at Austin, Tex.

The problem of water rights and uses arose after the U. S. Reclamation Bureau had announced plans to build a $12,000,000 irrigation and flood control dam in Coke County, near Robert Lee, in the Upper Colorado's territory. Attorneys for the bureau have decided the authorities must clarify their jurisdictions, particularly a provision in each act creating them for municipal, domestic and irrigation purposes to have precedence at all times over generation of power.

The Lower Colorado River Authority has $53,000,000 invested near Austin, primarily for hydroelectric generating dams. The legislature also has created an Upper Colorado River Authority and a Central Colorado River Authority, both undeveloped but with similar statutory backing.

There also is a question concerning the State Board of Water Engineers' authority to allocate water for irrigation or other purposes within the river agencies' territory. The board now exercises this authority, in the absence of a court test.

An engineering study of the Colorado's flow is being made, preparatory to efforts to make a comprehensive agreement among those interested, or a friendly law suit may be instituted to obtain judicial interpretation of the points involved.

News-Record editors in new posts

A number of important changes have been made in duties and titles of the editorial staff of *Engineering News-Record*. The changes stem from the appointment, effective Jan. 1, 1946, of Waldo G. Bowman, editor, to be in addition editor of *News-Record's* sister publication *Construction Methods*.

Edward J. Cleary, formerly managing editor, becomes executive editor of *Engineering News-Record;* Harold W. Richardson, formerly Western editor of *Engineering News-Record*, becomes executive editor of *Construction Methods;* and Vincent B. Smith, formerly associate editor of *Construction Methods*, moves to Chicago as Western editor of both *Engineering News-Record* and *Construction Methods*. Robert K. Tomlin, editor of *Construction Methods* for the last 18 years, and for 20 years prior to that a member of *News-Record's* editorial staff, assumes the position of managing editor of *Construction Methods*.

Waldo G. Bowman

Since all of these men are seasoned editors, the new setup foreshadows increased effectiveness in the postwar service rendered readers of McGraw-Hill's two construction papers.

Edward J. Cleary

Mr. Cleary, the new executive editor, has been a member of *News-Record's* staff since 1935, first as a specialist in sanitary, water supply and municipal matters and, after 1942, managing editor. A graduate of Rutgers University in 1929, he holds a B.S., an M.S. in sanitary engineering and a C.E. degree from that institution. His first three years after graduation were spent on heavy construction work in New Jersey and on the Christiana River tunnel at Wilmington, Del., following which he was engaged for two years in sanitary engineering research at Rutgers University before taking up editorial duties.

H. W. Richardson

Prior to the war, Mr. Cleary also acted as a special lecturer on public works organization and administration at New York University, and in 1943 he was the author of a series of articles on our war construction operations in South America, where he spent four months as a consultant to the Office of the Coordinator of Inter-American Affairs.

Becomes western editor

Mr. Smith, who replaces Mr. Richardson—whose 18 years' service as a *News-Record* editor are well known to readers of this journal — joined the staff of *Construction Methods* in 1929 upon graduation from Carnegie Institute of Technology. During the following years he has been the author of many of the field construction articles that have appeared in that magazine, traveling extensively throughout the entire United States to inspect, photograph and describe construction jobs of all types.

Vincent B. Smith

In 1944, Mr. Smith broke this routine for four months, to become the head of a newly created research and development division of the American Society of Civil Engineers' Committee on Postwar Construction. During that time he was in charge of the Society's program, which was aimed at stimulating the completion of designs and specifications for major postwar construction projects.

Navy awards contracts for San Diego pier work

The Eleventh Naval District headquarters at San Diego, Calif., has announced a $1,892,075 building project that will include construction of a 2700-ft. quay and four 1050-ft. piers. The M. H. Golden Construction Co. of San Diego has been awarded the constract, and construction is expected to start soon.

The four piers will be built near the Concrete Ship Construction Co. at National City, and will be used to berth portions of the reserve fleet. A concrete quay wall will reinforce the shoreline between the new piers. Also included in the contract is the dredging of 325,000 cu. yds. of San Diego's harbor to enlarge the reserve fleet berthing basin.

Work to begin at once on Boston insurance building

Construction will be started immediately on the first postwar business building in Boston, Mass., the new 26-story home office of the John Hancock Mutual Life Insurance Co., according to an announcement made by Paul F. Clark, President.

The new building, which will rise 417 ft. above the sidewalk, will occupy a site 290 ft. east of the company's present home office and will be bounded by Berkeley Street, Stuart Street and St. James Avenue. The site is now vacant except for the present John Hancock Hall, which will be razed to make way for the new structure.

The $15,000,000 building, designed to provide the maximum floor space possible for the dimensions of the lot on which it stands, will provide, exclusive of the space for elevators and other mechanical equipment, almost 625,000 sq. ft. of working floor space.

From an observation floor at the base of the lantern tower, which will be Boston's highest point of observation available to the public, it will be possible, on a clear day, to see 25 miles out to sea and 65 miles inland.

The builders will be the Turner Construction Co. of New York, Boston and Philadelphia. The architects are Cram & Ferguson.

Colombia road engineers seek equipment delivery

With plans afoot to surface 2000 miles of existing highways, two engineers of the Colombian Ministry of Public Works arrived in the United States recently to survey American highway engineering methods and to attempt to accelerate delivery of "sizable amounts" of road building machinery already ordered in this country.

The two are Alberto A. Tavera, construction engineer and former senator, and Gregorio M. Luiz, chief engineer of construction of a highway now under construction between Turbo and Dabeiba (an access route to the Pan-American highway).

A recent presidential action in Colombia authorized negotiations for a $20,000,000 credit from the Export-Import Bank at Washington to finance the highway work.

Mr. Luiz said highway work in his country has been slowed recently because of lack of road building equipment.

The two engineers are guests of the Department of Transportation and Economic Development of the Office of Inter-American Affairs.

Drop toll charge plan on N. Y. "thruway"

Governor Thomas E. Dewey of New York, in his annual statement to the state legislature Jan. 10, dropped a plan to finance the proposed 482-mile, $202,000,000 thruway by the application of tolls on motor traffic.

Instead, the governor said the new road will be financed from general state revenues and be operated free of tolls. Governor Dewey said that the decision to drop the toll idea was based on a report by three highway traffic authorities that traffic that would use the new highway under toll operation would be insufficient to finance the project. The proposal to charge tolls on the highway had brought protests from many state taxpayers and automotive associations groups. (*ENR*, Jan. 10, vol. p. 18).

Construction of the thruway, which will run from Rockland County, northwest across the Hudson River from New York City to the New York-Pennsylvania border west of Buffalo, will be started in the spring at three or more places.

Dam for Napa, Calif., to be built this year

Details of Rector Creek Dam in Napa County Calif., were released recently to coincide with the opening of bids in Sacramento this month. Funds for the project have already been appropriated by the state legislature.

Designed to supply water for the city of Napa, the State Veterans' Home nearby, and other communities, at an estimated cost of $1,100,000, the earth-filled structure is to be 900 ft. in length, and 150 ft. above the stream bed. Its mile-long reservoir, a quarter mile wide, will back up 4,400 a ft. of water. Construction is expected to last through 1946.

Six Alaskan civil works projects to be surveyed

Six Alaskan civil works projects have recently been ordered surveyed for development and modification by the House of Representatives Rivers and Harbors committee, according to Col. Conrad P. Hardy, district engineer at Seattle, Wash.

Douglas Harbor near Juneau, Homer Harbor near Anchorage, Kake Harbor on Frederick Sound, and a channel across Prince of Wales Island will be reviewed by Army Engineers for navigation development.

They will also study Dry Pass on the west coast of Prince of Wales Island and Ketchikan boat basin to determine whether modification of these projects is advisable.

The work will be undertaken as soon as previously scheduled reports have been completed.

Calendar of Meetings

NATIONAL

Highway Research Board, Oklahoma City, Okla., Jan. 25-28.

Associated Equipment Distributors, 27th annual meeting, Edgewater Beach Hotel, Chicago, Jan. 28-31.

American Association of State Highway Officials, Oklahoma City, Okla., Jan. 29-Feb. 1.

American Concrete Institute, 42nd annual convention, Hotel Statler, Buffalo, N. Y., Feb. 18-21.

Associated General Contractors of America, Inc., Chicago, Ill., Feb. 18-22.

REGIONAL

Colorado Society of Engineers, 30th annual convention, Shirley-Savoy Hotel, Denver, Colo., Jan. 31-Feb. 2.

Wisconsin Road Builders' Association, annual meeting, Plankington Hotel, Milwaukee, Wis., Feb. 6-7.

Ontario General Contractors Association, annual convention, King Edward Hotel, Toronto, Canada, Feb. 8.

Ohio Society of Professional Engineers, annual convention, Akron, Ohio, Feb. 14-15.

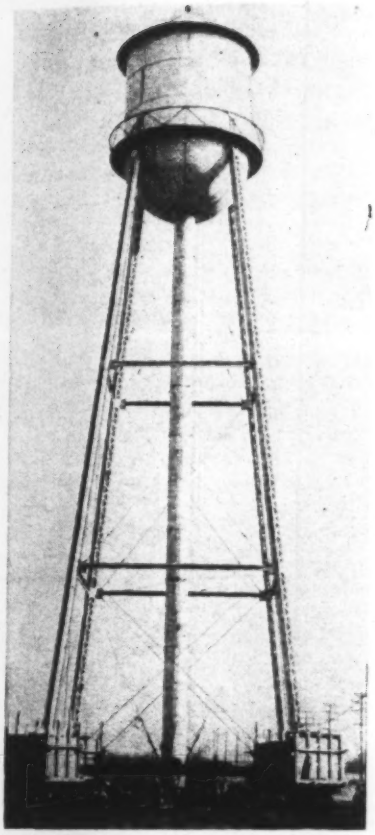
Minnesota Federation of Engineering Societies, victory convention, Hotel Radisson, Minneapolis, Minn., Feb. 21-23.

Ontario Good Roads Association, annual convention, Royal York Hotel, Toronto, Canada, Feb. 26-27.

Ontario Roadbuilding Association, annual convention, Royal York Hotel, Toronto, Canada, Feb. 27.

Michigan Highway Engineering Conference, Grand Rapids, Feb. 26-28.

Peacetime Tank Maneuvers



Going sideways . . . Water tank at New Jersey factory is pushed 800 ft. to make room for a new building.

Water tanks at two industrial plants in widely separated places got a recent unexpected shift in location as improvements to the plants necessitated revision of the water supply systems.

The tank shown at upper left—on the site of an addition to the Bayer Co. plant at Trenton, N. J.—had to be moved about 800 ft. to make room for a new building. Engineers decided to make the move without dismantling. The tank, which includes a steel shell and suspended bottom, is supported on a structural steel tower 91 ft. 4 in. high, which rested on concrete footings extending about 12 in. above the surrounding ground level. Combined dead weight of the empty tank and tower was 32 tons.

In planning the operation, a counterweight necessary to prevent the empty, 50,000-gal. tank from overturning in a computed wind velocity of 100 mph. was determined. The required counterweight, consisting of wooden boxes filled with dirt from the excavation for the new structure, was securely attached to each of the four steel legs of the tower.

The tank was prepared for moving by placing temporary 12x12 timber struts between the columns 1 ft. 6 in. above the base plate, to act in compression, and steel cables adjusted by means of turnbuckles to act as temporary tension guides. The steel riser pipe running through the center of the tower from the ground level to the bottom of the tank was suspended from tower legs by means of steel cables, and a system of cables connecting diagonally opposite legs was installed to keep the legs in their original position during the moving operation.

Counterweights used

Steel needle beams were then attached to the columns, counterweight boxes were placed on top of the needles, and the crane, used for excavating the new building foundation, filled the boxes.

After installation of counterweights and temporary bracing, the structure was raised by jacking underneath the needle beams to the height required to permit the moving equipment to be placed. A pair of 12-in. flanged steel beams 40 in. long were placed underneath the column base plates connecting the two legs on opposite faces of the tower. Steel roller shoes, rollers, railroad rails and wood cribbing were then placed with rails laid for a distance of about 110 ft. to the new foundation.

At the new location the structure was set at an elevation of 1.6 ft. above its former elevation to meet the conditions of hydraulic head required by the new building.

Raising a tank 40 ft.

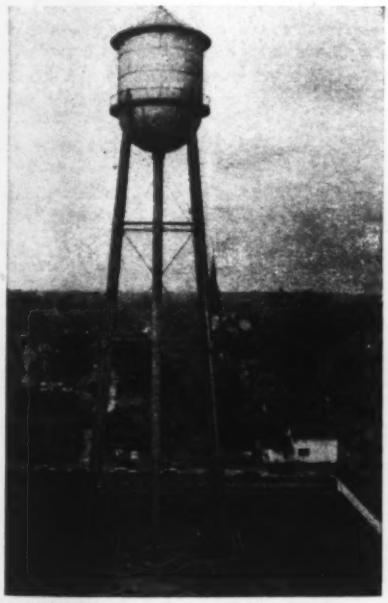
Another tank, of which two views are shown at the bottom left-hand corner of this page, is located at the General Electric plant in Fort Wayne, Ind.

Originally 145 ft. 10 in. in height, the tank was raised 40 ft. to provide additional head for a sprinkler system in a new building.

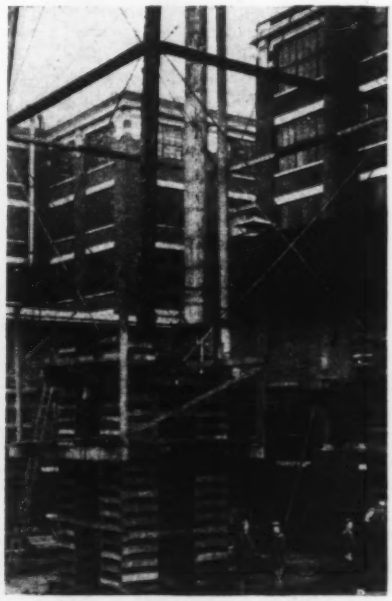
Workmen placed jack screws under each of the four corners of the tank structure, placing shoring as each level of lift was accomplished.

The Fort Wayne tank has a 75,000-gal. capacity. Bracing schemes similar to those used in New Jersey were used to maintain the contours of the structure.

Both tank moving jobs were completed by the Eichleay Corp. of Pittsburgh, Pa.



Going up . . . 40 ft. is being added to height of this Ft. Wayne, Ind., supply reservoir to permit greater efficiency of the fire-protection sprinkler system in an industrial plant.



Going up . . . Detail photo shows cribbing supports placed under tank legs as hydraulic jacks raise structure to new height. Individual members and steel riser were braced to prevent buckling.

Everett, Wash., proposes port improvements

Extensive development of harbor facilities and waterways of another Puget Sound port (*ENR* Jan. 10, vol. p. 14) loomed as a strong possibility recently as civic, port and business officials of the city of Everett and Snohomish County, Wash., moved to present their case to the Seattle district Army Engineers.

The occasion was a public hearing, called by District Engineer Col. Conrad P. Hardy, to obtain information on the area's needs.

The development would extend the city's shorelines by some two miles, and would necessitate the community's matching federal funds.

Requesting harbor changes and terminal expansion, the Everett Port Commission asked for a channel 700 ft. wide, 5,500 ft. long, extending from the south end of the present jetty north to a proposed drawbridge site to give deep water access to the port's 14th street terminal.

The project would require 5,000,000 cu. yd. of dredging, costing about $750,000, to be borne by the Army Engineers. The commission would contribute construction of bulkheads for retention of dredged material and thus provide additional industrial building sites.

The proposed terminal expansion in connection with harbor improvements would provide the city with 11,000 ft. of additional navigable water shoreline and deep water access to the 14th street terminal.

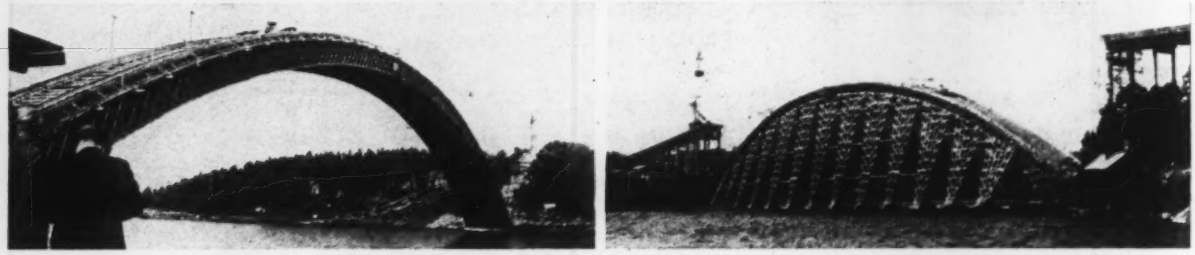
Terminal facilities would be expanded to provide 1,200 ft. of deep water dockage and an additional 1,000,000 sq. ft. of filled terminal area. Construction of a retaining bulkhead on another tract to aid development of the deep water area is also planned.

Urge new breakwaters on Massachusetts coast

Speedy action is expected at the next session of the Massachusetts legislature to finance construction of stone breakwaters off the Winthrop shore and possibly at Swampscott. Citizens of both communities, whose shore lines have suffered in the northeast gales of the last two months, have protested the lack of protection from the sea.

This year the Metropolitan District Commission has spent some $90,000 repairing last season's damage to the Lynn-Swampscott seawall, and in the years 1937-44 inclusive, this commission paid contractors $160,000 for similar renovation to the Winthrop seawall.

Engineers say that it would be much cheaper and more effective to plant offshore granite breakwaters. Project cost would be split between state and towns.



World's longest concrete arch, 866 ft., completed in Sweden during the war

Begun in 1938, set back by a disastrous falsework collapse Aug. 31, 1939, and finally opened to traffic in July, 1943, is the history in brief of the 866-ft. concrete arch over the Angerman River, principal structure in a 9,600-ft. highway project in Sweden, which includes 4700 ft. of bridges and viaducts. Known as the Sandö Bridge, the concrete arch is the longest in the world, and is shown above in the first picture of its completed state to arrive in the United States, a view supplied by D. B. Steinman, consulting engineer, New York, who was selected by the Office of War Information to shortwave an American message of congratulations to Sweden when the bridge was dedicated. The two construction pictures are significant as showing (left) the timber arch centering that collapsed after only a small amount of concrete had been placed (ENR Sept. 18, 1939, vol. p. 388), and (right) the multiple falsework supports that were added on the second and successful try.

The concrete arch is of triple box section, 31 ft. wide, 8¾ ft. thick at the crown and 14¾ ft. at the springlines. All walls and the top and bottom slab of the box are reported to be 12 in. thick in one dispatch, while another states that the two interior walls are only 8 in. A concrete working stress of 1,550 psi. and a steel working stress of 21,200 psi. were used. The arch has a rise of 130 ft., and carries a 34-ft. roadway and two 4-ft. sidewalks on three lines of girders supported on circular concrete columns. The thickness of the Sandö Bridge at the crown is 1/100 of the span, which compares with the three next longest concrete arch spans as follows: Elsa, Spain, 1/40 of its 645-ft. span; Traneberg Sound, Stockholm, Sweden, 1/60 of its 593-ft. span; and Plougastel, France, 1/40 of its 590-ft. span. The latter was destroyed by the Germans (ENR, Mar. 1, 1945, vol. p. 289).

The Sandö Bridge was built by Skansa Cementgjuteriet of Stockholm, under the direction of the Swedish Highway Board.

N. Y. building trades strike averted by granting of six paid holidays

AFL union accepts adjustment board's decision also giving wage increase—Electrical union permits use of labor-saving devices to speed work on needed housing

A building trades strike scheduled to be started in New York City Feb. 1 by the Building and Construction Trades Council was called off Jan. 13 after the Wage Adjustment Board of the Department of Labor reconsidered a previous decision and granted six paid holidays annually to the 150,000 members of the 30 AFL affiliated unions represented by the council.

This settlement, which has the approval of contractors represented by the Building Trades Employers Association, brightens the prospects for an early start of about $200,000,000 in proposed building in the metropolis because it will give contractors a clear-cut picture of labor costs when they prepare bids for construction projects. However, it is pointed out that unsettled conditions in the materials market still will keep costs of construction relatively high.

The recent decisions also affect workers represented by the Joint Labor Committee on Heavy Construction and their negotiations with the General Contractors Association. These groups and the building workers and employers had jointly requested the changes in working conditions.

The wage board did not change its decision (*ENR* Jan. 3, vol. p. 9) reducing slightly the unions' demand for a 15 percent wage increase which was also part of the contract agreed upon Oct. 26 last after 18 months of negotiations between the council and the employers' association and presented to the board for approval.

When the unions refused to accept the Wage Adjustment Board's earlier decision it was feared that all of the negotiation work and cooperation developed over the 18-month period would be jeopardized. While recognizing that the New York wage rate is nearly the highest in the country, the unions felt that they were entitled to increases in line with those throughout the country, and were prepared to strike to get them.

The new contracts, which still require formal ratification, call for stabilization of hours and working conditions for a period of five years, and preclude opening of wage discussions for two years.

Electrical workers permit labor-saving

Local 3 of the International Brotherhood of Electrical Workers on the same date agreed to permit and promote the use of labor-saving methods and devices to speed housing, and to hold down construction costs.

The new compact also includes a no-strike, no-lockout pledge and a waiver of time-and-a-half rights for overtime, in return for two 7-hour shifts "for the duration of the existing housing crisis".

This accord, affecting 10,000 AFL electricians and 364 electrical contracting companies in New York City, took effect upon an exchange of letters last Friday between A. Lincoln Bush, chairman of the Joint Industry Board of the Electrical Industry, and Harry Van Arsdale, Jr., business manager of the local.

Mr. Van Arsdale said the union felt a "responsibility" to take care not only of the immediate housing crisis for veterans and others, including 3,000 of its own members returning from the armed forces, but "we also want to see slums eliminated," envisioning "a very busy four or five years."

Building wage dispute settled at Rochester, N. Y.

Work on several big construction jobs in Rochester, N. Y., which had been halted by a wage dispute between the mason contractors association and the hoisting engineers union was resumed Jan. 7, as a result of an agreement reached by a negotiating committee representing both groups.

Under terms of an agreement announced by Andrew Doyle, supervising mediator of the State Department of Labor, the association and union signed a 2-year contract, effective Jan. 1, which provides for an increase of 15 per cent, in wages, and calls for reopening of wage discussions only at the end of the first year.

The issue of whether the union members would be paid for six legal holidays was left to arbitration.

A score of more skilled engineers will be needed to get under way on the drawing board stage the $3,500,000 sewer program recently approved by Columbus, Ohio, voters, said Orris Bonney, sewer engineer, who said the city advertise some of the contracts by mid-March.

Builders urge program to aid housing

Demand for improved government handling of controls on housing construction was voiced last week as builders began to appraise the effect of recent government moves to channel construction material towards construction of small housing units (*ENR* Jan 10, vol. p. 13).

The National Association of Home Builders, concluding a recent 3-day emergency conference at Washington, submitted a 7-point program to President Truman, urging that the government take steps to increase the productivity of labor, and curb restrictive trade practices.

The association's program included:

1. Adjustments of controversies between the industries producing scarce building materials and the Office of Price Administration.

2. Find ways and means to assure that a full 50 percent of building materials are channelled to low-cost housing, by control at the manufacturing, as well as the distribution level.

3. Speeding up the "cumbersome" procedure of approval of wage adjustments in the building trades.

4. Prompt revision of the Federal Housing Agency's current policy of maintaining a wide margin between the stabilized cost index and current construction costs as they actually exist.

5. A government call on the building trades for an increase in the productivity of labor, elimination of restrictive trade practices, and provision of increased numbers of mechanics by nation-wide training programs.

6. A call by federal officials on municipal authorities for action in all communities to improve and correct zoning and building code requirements that retard construction or unnecessarily increase cost of housing.

7. An improved financing method to insure a large program of lower cost rental housing for veterans unprepared to purchase homes at this time.

Less regulation asked

At Columbus, Ohio, former Governor John W. Bricker, 1944 Republican Vice-presidential nominee, asserted that there must be "less regulation and more encouragement" by the government if the housing problem is to be solved.

Mr. Bricker scored the "red tape" of Washington, and called for simplification of OPA regulation as a means of easing the shortage and permitting private enterprise to do its job.

Trailers ease Colorado U. housing

The student housing shortage at the University of Colorado has been partially alleviated by the moving, last fall, of 200 trailer house units from Liberal, Kan., where they formerly were occupied by war workers, to the campus at Boulder.

Purchased by the University at a nominal price, the main expense involved was that of moving the houses to their new location, mounting them on timber frames, cleaning and repairing them, connecting service facilities and providing unit centers for laundry and bathing.

Occupancy is limited strictly to service men and women. About one-half of the trailers are occupied by married couples; the other half by single persons, with two or three sharing one trailer house. The trailers are electric lighted while all heating and cooking is done with fuel oil. The university is handling the project on a non-profit base. Monthly rental for each trailer is $20, which is based on a four-year amortization program covering the cost of the investment and expenses incurred in moving the houses to Boulder and rehabilitating them ready for occupancy.

Initial studies have been started, under the supervision of Waldo E. Brockway, business manager and treasurer of the University, for a greatly expanded student housing program. Under this plan, the University will build about $2,000,000 worth of permanent student dormitories. About $800,000 will be spent on a girls' dormitory; the remainder on dormitories for married couples. Construction will be of hollow tile and stone masonry facing for the bearing walls, with reinforced concrete interior framing.

Similar to other moves

Colorado University's experiment in providing housing for its married students is similar to the efforts of most major institutions to cope with like problems. Massachusetts Institute of Technology has started construction of a home colony on its own grounds (see accompanying photograph), and Illinois University, Indiana, Washington State, and Dartmouth, among many others, have announced plans to convert barracks and provide other accommodations for the already great influx of student-families.

M. I. T. builds homes for married students

Despite the handicap of snow and severe cold, construction of 100 homes for young married veterans of World War II who will enter Massachusetts Institute of Technology, Cambridge, Mass., during the winter and springtime is well advanced.

Erected on a plot to the west of the Institute buildings, the project, named "Westgate," will cover an area of nearly 10 acres, providing 50 houses for married students without children, and 50 with an extra room for those who have larger families.

Fifty of the structures have already been placed on the college-owned building site.

The project is directed by the Institute's School of Architecture and City Planning, under the general direction of Dean William W. Wurster.

Designed to provide housing facilities for a maximum of five years, after which the temporary structures will be removed, "Westgate" will serve the added purpose of providing a study of the possibilities for future permanent housing for married students, research assistants, and young instructors serving on the Institute staff.

Mexico's 1946 budget includes many buildings

The Mexican Chamber of Deputies has received for study the 1946 national budget, highest in the republic's history. The $243,000,000 budget represents a $40,000,000 increase over 1945. The budget breakdown includes $36,000,000 for public works and communications, $2,500,000 for the interior ministry, $63,500,000 for national defense, $8,000,000 for the marine ministry, and $11,500,000 for public health, much of which will go for new buildings.

President M. A. Camacho in a recent broadcast mentioned among the tasks of his administration for 1946 an extensive highway and railroad building program to bring closer together many sections of Mexico that are semi-isolated. (*ENR* Dec. 20, 1945, vol. p. 845).

The government has disclosed plans for the virtual completion of its share of the Pan-American Highway during this year. These plans call for surfacing of the route, which enters Mexico from the north at Nuevo Laredo, to within 100 miles of the Guatemala border on the south.

It also was disclosed that a second highway linking Mexico City and the United States at Jaurez, opposite El Paso, Tex., would be opened to traffic this year.

New Boston Harbor tube considered necessary

The Massachusetts State Planning Board's project for a double-barreled $12,900,000 vehicular tunnel under Boston Harbor, paralleling the present tube from Boston to East Boston, met with no opposition at a recent hearing before the Special Legislative Committee on Postwar Problems.

Announcing that traffic through the existing Sumner tunnel already taxes its capacity, Philip T. Desmond, Boston traffic engineer, said traffic has been exceeding the 1941 peak, and with the 4000 additional cars a day expected when the Logan Airport and the central artery is completed the running peak may reach 26,000 to 35,000 cars a day.

The board's plan would send all eastbound traffic into the dual lanes of the new tunnel and all west-bound traffic through the present Sumner tunnel, according to Howard J. Duffy, senior engineer of the board.

Comparing the planned expenditure of $12,900,000 for the new tunnel with the $19,600,000 Sumner job, he explained that the difference represented land condemnations and construction of street approaches.

Plan more Canadian dam construction

Construction of the long-projected St. Mary's Dam at Spring Coulee, Alberta, has been decided upon by the dominion government of Canada, according to an announcement made recently in Calgary.

Initial work, estimated to cost about half a million dollars, is scheduled to start in the spring of 1946. The rolled-earth dam is the key to the whole of the proposed Southeast Lethbridge irrigation scheme which will cost about fifteen million dollars. The dam is part of a control system for the headwaters of the Milk and St. Mary's Rivers, which rise in Montana before flowing into Canada, returning then to the United States as a part of the Missouri River watershed. Allocation of water rights is therefore a matter that will call for international agreement.

Snare River project

The first step towards the construction of a new hydro-electric development in the Northwest Territories has been taken by the directors of the Giant Yellowknife Goldmines Limited who have authorized the purchase of equipment for the construction of a dam on the Snare River, north of the gold mining area. The dam will be the principal unit in a small water power plant which will supply power for gold mining and milling operations.

The equipment now to be purchased will be taken in to Yellowknife over the winter road operated over the snow from Grimshaw to Hay River on the south side of Great Slave Lake, and thence across the ice of the Lake. This will make possible an early start at construction. The plant will be the second water power plant in the Northwest Territories. The existing plant is a small installation built in 1940-41, also in the Yellowknife area.

Other major Canadian power and irrigation projects now getting under way include the $50 million Des Joachims dam and plant on the upper Ottawa River, being built by the Hydro Electric Power Commission of Ontario (*ENR* Dec. 6, 1945, vol. p. 757).

Bids readied on major dam projects

With funds now available under provisions of the First Deficiency Bill, Army and Bureau of Reclamation engineers last week were moving rapidly towards getting work under contract. Army projects said to be ready for bids were Allatoona Dam and Bluestone Reservoir, while Reclamation men recommended construction of Bidwell-Bar Dam, near Oroville, Calif.

Brig. Gen. Beverly C. Dunn, Jr., Ohio River division of U. S. Engineers, recently announced that orders had gone out to contractors to resume work on the $15,000,000 Bluestone reservoir on the New River near Hinton, W. Va., and the Center Hill reservoir in the Cumberland Basin in Tennessee, as soon as President Truman signs the deficiency appropriation bill. Work was suspended when the war started, with the Bluestone Dam about half completed and the Center Hill project, which will also cost about $15,000,000, about one-fourth finished.

Work on new projects, such as the $4,000,000 Delaware, Ohio, reservoir and an improvement program on the Monongahela River will be started as soon as possible after bids are advertised, he said, possibly within 30 to 60 days in some cases. Heavy construction work probably will start in the spring.

Ask Allatoona bids

U. S. Army Engineers at Mobile, Ala., are preparing to advertise for bids on Allatoona Dam, first project of an expected $95,000,000 program for flood control and rivers and harbors work in the southeast.

The deficiency appropriations bill (*ENR* Jan. 3, vol. p. 4) provided an initial allocation of $3,000,000 to begin work on the dam and reservoir near Cartersville, Ga. The dam will regulate flood waters from the Etowah River above Rome, Ga., and provide 66,000 kilowatts of hydroelectric power. A later unit will add 33,000 kilowatts. The concrete gravity structure will be 1,020 ft. long, 184 ft. high, and back up a lake covering 20,300 acres.

Army Engineers said actual construction and ground clearing work should begin by spring. Original plans called for completion of the dam within a three-year period.

Oppose Roanoke River Dam

The city council at Henderson, N. C., has adopted a resolution asking the federal government not to erect a multi-purpose dam at Buggs Island on the Roanoke River, (*ENR* Jan. 3, vol. p. 4) but instead to construct a series of detention dams to provide flood control in the river valley without inundating valuable farm lands as would be the case should the Buggs Island project be carried out.

Urge Bidwell-Bar Dam

Bidwell-Bar Dam, reservoir, and power plant, a $70,000,000, multiple-purpose project to be constructed on the middle fork of the Feather River eight miles east of Oroville, Calif., are recommended for immediate construction as part of a 15-year building program by the United States Bureau of Reclamation in its Central Valley basin report.

The report, including the Bidwell-Bar project, has been completed by engineers of the Bureau's Sacramento office and sent to Washington for approval.

This project, if approved and financed by Congress, will:

(1) Provide irrigation, flood control, domestic water supply, power, recreation, and other benefits for a large area lying within the Feather River region between Chico to the north and Bear River to the south, and between Oroville and Butte Creek.

(2) Furnish a full water supply for irrigating approximately 100,000 acres of land now unirrigated and a supplemental water supply to approximately 170,000 acres now irrigated by Feather River water.

(3) Generate over 100,000 kilowatts of capacity producing an average annual output of 310,000,000 kilowatt-hours of hydroelectric energy.

Bidwell-Bar Dam would be one of the highest dams in the Reclamation Bureau system. The maximum height of the dam would be 679 ft. above the streambed. It would have a length of 2,100 ft. providing capacity in the reservoir for 1,200,000 ac. ft. of water, covering an area of 5,800 acres. The lake would back up the middle fork of the Feather to about 11 miles and the south fork to about eight miles.

Study Bear River flow

At a recent meeting in Pocatello, Idaho, to settle utilization of waters of the Bear River, state reclamation engineers of Utah, Wyoming, and Idaho, considered a detailed study of the river, its streamflow, and flow of its tributaries, in order to determine agreements regarding the water rights of the users in the three state area.

The 370-mi. long stream originates in Utah, flows back through Idaho and Wyoming, and into Great Salt Lake.

Before any irrigation compact can become effective, it must pass through a 3-state commission and be approved by the lawmakers of each state. Final passage probably will not be effective in the state legislatures until January, 1947.

MEN AND JOBS

Above: Newly-elected officers of the Illinois County Highway Supervisors Association pose for a group picture after a recent meeting at Springfield. Left to right they are: H. A. KLUGE, secretary-treasurer, of Edwardsville; JOSEPH R. FAY, vice-president, of Carthage; CHARLES L. DEES, president, of Robinson, and R. F. FISHER, retiring president, of Urbana.

Above: Figuring out what work do next on Okinawa, now that the war is ended, COMMODORE A. G. BISSET, commander, naval construction troops, discusses the future with REAR ADMIRAL C. H. COTTER (right) Seabee chief in the western Pacific.

Above: HOMER J. HAYWARD (left) assistant chief, engineering section, division of health and sanitation, Institute of Inter-American Affairs, compares notes with W. E. Corfitzen, acting chief of the special assignments section, Bureau of Reclamation.

At left: Members of the governing board of the College of Engineers of Puerto Rico attend their organization's seventh annual meeting at San Juan. Seated, left to right, are: MANUEL CRUZ VARGAS, JOSE E. CULPEPPER, ARTURO ROMAGUERA (president), and JUSTAVO PADILLA. Standing are: ARBERLE GIROD, LUIS A. GIRONA, ELOY RUIZ, Miss Luz Maria Davila (secretary), FRANCISCO NIDEBESA, PEDRO LUIS AMADOR and FRANCISCO FURTUZNO, editor of "La Revista de Ingenieria de Puerto Rico", the association's monthly publication.

Walter A. Ewell has joined the Oakland, Calif., division of the Austin Co. He has recently been with International Engineering Co., Inc., at Denver, Colo., on preliminary design work on the dam to be constructed on the Indus River for the government of India.

Robert H. Dodds, former *Engineering News-Record* editorial staff member, has been promoted to lieutenant commander in the Civil Engineer Corps reserve. He is on duty in the historical division of the Bureau of Yards and Docks, in Washington, D. C.

E. C. Seawell, superintendent of construction and water and sewer maintenance for High Point, N. C., has resigned after having been connected with the city's public utilities department for more than 32 years.

Frederic W. Alexander, assistant chief engineer Canadian Pacific R.R., Western lines, in charge of all phases of railroad construction from Vancouver, B. C., to Port Arthur, Ont., has retired after 48 years of railroading.

Brice Patrick, employed for eight years as city engineer at Muskogee, Okla., has been employed as location engineer for the Oklahoma highway department in the Muskogee district.

T. G. Poindexter, who has been at Sanford, N. C., for the last five years as district engineer for the North Carolina Highway Department, has been promoted to assistant division engineer and transferred to Asheboro. He has been suc-

ceeded at Sanford by **E. Oscar Brame,** who has been with the department at Wadesboro, and prior to that at Wilkesboro and Lenoir.

Leonard McClintock, San Pablo, Calif., civil engineer, has been appointed city manager and engineer of Martinez.

A. R. Neiman, former assistant general manager of the Kaiser Swan Island shipyard at Portland, Ore., has opened an office at Vancouver, Wash., as a consulting engineer.

W. O. Council, recently with the engineering and construction department of the Louisiana Power and Light Co., has been appointed town manager at Fuquay Springs, N. C., succeeding **R. Glenn Johnson,** resigned after six years. A graduate of the North Carolina State College School of Engineering, Council prior to his Louisiana connection was with the engineering and construction division of the Carolina Power and Light Co., Raleigh, N. C.

R. F. P. Bowman, roadmaster, Canadian Pacific Railroad, Lethbridge, Alta., has been appointed divisional engineer at Brandon, Man., succeeding **D. J. Martin,** transferred.

John Keen has been appointed assistant county engineer and road superintendent for Ontario County, Whitby, Ont.

Myron A. Tuta, former employee in the Mahoning County, Ohio, engineering department, is now chief deputy engineer, succeeding **Chester V. Long,** resigned.

Holton Cook has left for Liberia where he will represent Fargo Engineering Co., Jackson, Mich., in the investigation of hydro-electric possibilities on some of the rivers of that country. He will also have general supervision of the construction of the final section of Lower Falls Dam on the Farmington River in Liberia, owned by Firestone Plantations Co.

W. H. Cushman of Marion, Ark., has been appointed city engineer of West Memphis, Ark. He is a former Arkansas State Highway Department engineer for the district.

Capt. Lyell Hauger, Ashtabula, Ohio, has been made officer-in-charge of the post engineers at Parsel Army Air Forces Specialized Depot, Shelby, Ohio.

S. F. Ryan was recently promoted to division engineer of the Reconstruction Finance Corporation, Office of Defense Plants, with headquarters at Tulsa, Okla.

Assignment of **Herbert E. Robinson,** reclamation, construction and military engineer, and resident engineer at Denver, to direct work on three Bureau of Reclamation projects in the Republican River basin of eastern Colorado and southern Nebraska, has been announced. Robinson will be responsible for investigations, reports and construction on the Frenchman-Cambridge, Bostwick and North Republican projects.

R. W. McColough, former deputy minister of highways and public works of Nova Scotia and recently director of construction for the dominion department of munitions and supply, has been appointed executive assistant to Premier Angus L. MacDonald.

T. P. Scholz has been appointed Whatcom County engineer at Bellingham, Wash. **Carl McCoy,** who has been acting engineer for some time, will remain as office engineer.

R. E. Woodward, who has served as Pacific County engineer at South Bend, Wash., for the last ten years, has resigned. Mr. Woodward will enter private engineering practice.

The engineering firm of Jones & Edison, Minneapolis, Minn., has been established by **Chester V. Jones,** who recently resigned as city manager, and **L. H. Edison,** formerly with the Interstate Power Co. Mr. Jones was formerly city engineer of Albert Lea, Minn.

Back to Civilian Activity

Charles A. Jackson, Jr., resumed his work as civilian engineer with the Seattle District U. S. Army Engineers recently. With the rank of major, he was serving as chief of the civil works branch.

A. L. Putnam has returned to the Wyoming State Highway Department as a construction engineer. Mr. Putnam spent two and a half years in combat zones and was chief engineer of the Fort Warren, Wyo., area office.

D. W. Morrison, head of the design branch of the Sacramento, Calif., District U. S. Army Engineers, will continue in the same capacity although he has been recently discharged with the rank of lieutenant-colonel.

Howard L. Stillwell, major, post engineer at Morris Field, N. C., since April, 1943, has been separated from the Army and has entered private practice at Charlotte, N. C.

John Herbert Brown, lt. col. and supply officer for the Portland, Ore., district of Army Engineers and president of the Portland section of the Society of American Military Engineers, is being released from active duty and will rejoin Gladding, McBean & Co.

Frank M. Williams, who was recently discharged as a colonel in the Army Supply and Maintenance Service, has rejoined Associated Engineers, Inc., Fort Wayne, Ind.

Robert S. Mayo, major, U.S.M.C., has returned from the Pacific theater where he was deputy commander of the Sixth Marine Engineers. He has resumed his former practice as consultant, affiliated with the Lancaster Iron Works, Lancaster, Pa.

E. W. Thorson, formerly commander in the Navy Civil Engineer Corps, Washington, D.C., is now with the Minneapolis office of the Portland Cement Association as a structural engineer.

Basil Tuttle, of Kenosha, Wis., has been engaged to serve as city engineer of Kenosha on a temporary basis until next May 1 when a full time engineer will be engaged. Mr. Tuttle was recently with the U. S. Army Engineers.

Eugene B. Sullivan, captain, who recently served as assistant chief of the management branch of the Repairs and Utilities Division, Third Service Command Engineers, has been appointed director of public works for East Hartford, Conn.

James M. Johnson, of Raleigh, N. C., former assistant purchasing agent of the North Carolina State Highway and Public Works Commission has been released from the Navy with the rank of lieutenant and has been named assistant director of the N. C. State Division of Purchase and Contract, succeeding **Crayon C. Efird** of Albemarle.

Charles E. Nelson, captain, has returned to the Springfield, Ill., city engineer's office to be office engineer after spending from Oct. '44 to Oct. '45, in France, Holland, and Germany with the Corps of Engineers.

John B. Tiberi, Jr., lt. col., will again be affiliated with the Allied Construction & Supply Co., Chicago, Ill. He recently returned from 42 months service in the European Theater, where he was chief of the ammunition supply division, supplying the Army Air Forces in England, France and Germany.

ENGINEERING SCHOOL NEWS

New courses at N. Y. U., Wisconsin and Florida—Summer training for Illinois—Building conference at Iowa

It is announced by Dean Thorndike Saville that the department of civil engineering of the college of engineering of New York University will offer two refresher courses for civil engineering graduates. These courses have been arranged primarily for war veterans who were graduated in civil engineering during the last few years and who went directly into the armed services with little or no active practice in civilian engineering work. One course is in structural engineering, and the other course is in sanitary engineering.

The courses will be given in the evening and sessions will be for one 2-hour period each week for a term of nineteen weeks at the Washington Square Center of the university, beginning in February.

Application should be made to Dr. Harold E. Wessman, of the college of engineering, N. Y. University, New York 53, N. Y., as soon as possible.

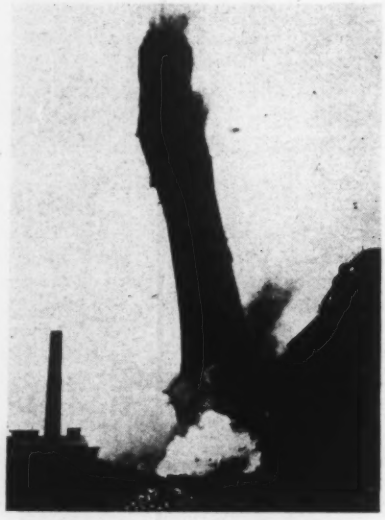
The extension division of the University of Wisconsin has announced a new course, taught by the correspondence-study method, entitled "Stress Analysis of Rigid Building Frames, Slope Deflection Methods," for engineers and designers. After developing the general slope deflection theory, the course makes a practical application of the theory in the stress analysis of rigid building frames as constructed of steel and of reinforced concrete and subjected to live and dead vertical loadings and to horizontal loadings from wind and earthquakes. The course, in 24 assignments, is based on a textbook and supplementary material. A prerequisite is a good working knowledge of engineering mechanics (statics), strength of materials, and essentials of structural theory. Enrollment is open to applicants in any state or country.

A short course in residential construction will be given at the University of Illinois, Jan. 22-24, for Illinois contractors and builders who wish to build better homes of the smaller type. The small homes council of the university is sponsoring the program, which has been requested by trade associations, federal agencies and many individuals.

Frederick T. Hannaford has been appointed head of the department of structural design at the University of Oregon, succeeding Percy Paget Adams, who is retiring. Adams, who has been assistant dean, has been a faculty member since 1901, longest of any present instructor. Hannaford, who will take office on April 1, is acting head of the school of architects and allied arts at the University of Florida. A graduate of Washington State College, he took graduate work at the University of Idaho.

Robert F. Edgar, former University of Pittsburgh faculty member who was head of the engineering faculty of the Shrivenham American University in England, has returned to take up his duties at Pittsburgh.

Shrivenham was taken over by the United States Army as an instruction center for overseas servicemen last summer. Other Pittsburgh teachers who were on the faculty included Maj. W. Irwin Short, D. D. Lessenberry and W. George Crouch of Pitt, and Fred J. Evans and George N. Porter of Carnegie Tech.



Chicago's tallest stack is "burned down"

This 265-ft. smokestack, formerly serving the boiler house of the old International Harvester plant in downtown Chicago, was demolished by novel means recently.

Contractors engaged in tearing down the plant to make way for a $3,000,000 plant for the American Colortype Co., undercut the huge stack, heavy wood shoring being inserted about halfway into the 27-ft. dia. base. When surrounding structures had been cleared, the shoring was set afire, and the stack collapsed. Engineers said that the smokestack, built in 1900, weighed about 4,000 tons, and was one of the largest in the United States.

On Jan. 23-24 there will be a "building industry conference" at Iowa State College. Prof. Frank Kerekes is chairman. The conference is sponsored by the State Building Code Central Committee, the Iowa Engineering Society and the Iowa State College.

Resumption of the University of Florida's cooperative program whereby students enrolled in the College of Engineering combine training in industry with engineering education was announced recently by President John J. Tigert of the university.

Discontinued in 1942 because of decreased student enrollment during the war, the program is being resumed under a plan whereby teams of two students each alternate actual work in a Flordia industry with classroom training in engineering.

To provide summer training for the civil engineering students of the University of Illinois, the trustees have approved the leasing of Camp Rapideau in the Chippewa National Forest, near Bemidji, Minn. Eight weeks of training in July and August will be given there for students between their freshmen and sophomore years. Illinois areas were not selected, because those available for surveying instruction were thought unsuitable for practice in topographic and route surveying, and no bodies of water in the state were available for hydrographic surveying.

Dr. James Creese at his recent inaugural as the sixth president of the Drexel Institute of Technology, Philadelphia, Pa., strongly favored universal military training but said that four months would suffice "for the drill and the hardening." After that, Dr. Creese suggested, let qualified men be sent, with scholarships, wherever the best training for specialists is obtainable.

Prof. H. L. Bowman, head of the civil engineering department of Drexel is one of the top assistants on the staff now making the United States strategic bombing survey of Japan. It will bring out the full story of what our bombs did to Japan. Professor Bowman's assistants include Prof. LeRoy A. Brothers, also of the Drexel engineering faculty, and Stafford H. Parker, civil engineer with the United Engineers and Constructors, Inc., Philadelphia, now on leave. These men were also associated with the similar survey made of Germany following the close of the European war.

New Reclamation office for Sacramento Valley

The establishment of a district office of the Bureau of Reclamation for the Sacramento Valley area of the Central Valley Project and the appointment of James K. Carr as district engineer in charge, have been announced by Commissioner of Reclamation Michael W. Straus.

Creation of the new district, embracing an area in the Sacramento Valley extending from Knights Landing to Shasta Dam, was recommended by Regional Director Richard L. Boke of the Bureau's Sacramento office. The district office will be located at Chico, Calif.

For the last two years, Mr. Carr has served as technical assistant to the regional director, and for four years prior to that he was associated with the planning and construction of Shasta Dam. He has also been engaged in making engineering and economic investigations for the bureau.

A graduate of the University of Santa Clara with a degree in civil engineering, Mr. Carr prior to joining the staff of the Bureau of Reclamation, worked in California for the U. S. Geological Survey, the Division of State Highways, the Pacific Gas & Electric Co. and as city engineer at Redding, Calif.

Rising costs cut down Arizona highway work

Because of rising costs in road improvements, Arizona expects 15 per cent less of highway construction during the coming fiscal year than was originally considered, according to the state highway commission. The state now plans to split the large projects on its agenda into smaller units.

Road-builders are hesitating to bid on large jobs, not knowing whether they can obtain materials and labor needed to complete contracts within the time specified, yet it is said that they are willing to take a chance on smaller jobs.

Although the Federal Aid Highway Act of 1944 set up a $1,500,000,000 national 3-year authorization, of which Arizona's share would be $5,300,000 each fiscal year, halting Arizona's road-building program altogether would result in Federal aid allocated to Arizona for the year going by the board. Officials of the highway commission disclosed that the state could not economically afford to allow this. It is believed, they said, that the high road cost situation might improve somewhat this year as the labor and materials situations becomes more stabilized.

Green River Dam plans are now complete

Plans are complete for the development of the Green River dam project in Morrisville, Vt. Work is to begin in early spring on the 6000-acre "made" lake for a water and light company. Located at Hyde Park, the dam will be 100 ft. high, and 420 ft. long with a spillway of 60 ft. The latter will be at an elevation of 1200 ft. above sea level.

Comprehensive flood control precautions are included in plans for the dam. Charles T. Main, Inc., of Boston, is consulting engineer for the work. The estimated cost of the entire project is $675,000.

Seek to control level of Lake Ontario

Both the Monroe County, N. Y., board of supervisors and the town board of the town of Greece have asked representatives in Congress to confer with War Department engineers to see if action can be taken toward controlling the level of Lake Ontario, now abnormally high.

High water caused considerable damage last fall along the lake shore near Rochester. Since the water is now two feet above normal, it is sought to prevent further damage, if possible. Especially it is sought to learn whether Canada has diverted the flow of certain waters from Hudson Bay, into Lake Superior.

JOBS OF THE WEEK

OUTFALL SEWER, Los Angeles, Calif.

City of Los Angeles received the lowest bid for Hyperian Outfall Sewer from Guy F. Atkinson Co., Long Beach, at $3,517,410. L. Aldrich, Los Angeles, is the city engineer.

DWELLINGS, Houston, Tex.

C. A. Swinson, Houston, will construct 200 dwellings and utilities, by force account. The estimated cost is $2,625,000.

APARTMENT, New York, N. Y.

Simon Brothers, New York, N. Y., will construct a 19-story apartment, by their own forces. William F. Hohauser, New York, is the architect. The estimated cost is $2,000,000.

OFFICE and GARAGE, Caracas, Venezuela.

H. L. Boulton & Co., Caracas, awarded a contract to build a 6-story office building with basement garage to Caldwell & Scott, Inc., New York, N. Y., to cost about $1,000,000.

PLANT, Cap de la Madeleine, Que.

Fraser-Brace, Ltd., Montreal, Que., awarded a contract for a plant to manufacture pigments by Canadian Titanium Pigments, Ltd., Montreal, Que. The estimated cost is $7,448,000. I. R. Tait is the company engineer.

FLEET BERTHING, Orange, Tex.

Brown & Root, Inc., Houston, Tex., will construct a permanent fleet berthing, at Naval Base for Bureau of Yards & Docks, Navy Dept., Arlington, Va., at $2,630,000. Cummins, Stone & Shutts, Orange, are the architects.

PLANT, Parkersburg, W. Va.

Turner Construction Co., New York, N. Y., has been awarded a contract for a plant, sidings, foundations, roadways and structures at Willow Island, north of Parkersburg by Calco Chemical Division, American Cyanamid Co., New York, N. Y. The estimated cost is about $3,000,000.

SALES and SERVICE BUILDING, Chicago, Ill.

Ragnar Benson Co., Chicago, Ill., has been awarded a contract to design and construct 5-story, 150x300-ft. brick, stone, reinforced concrete sales and service station for Cadillac Motor Car Co., Chicago. The estimated cost is $1,500,000.

GRADING, PAVING and BRIDGES, California.

State Division of Highways, Sacramento, received the lowest bid for improving road and constructing bridges in Sonoma and Marin counties from A. G. Raisch Co. and Harms Brothers, San Francisco, at $1,555,096; improving road in Monterey County from A. Teichert & Son, Inc., Sacramento, $795,692. G. T. McCoy, Sacramento, is the state highway engineer.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 18.

Philadelphia authorizes big sewer projects

The city council of Philadelphia, Pa., has authorized the awarding of contracts for $8,000,000 worth of sewage projects —the first step in the city's sewer program for which funds are available out of a $42,000,000 city loan. Construction, improvement and equipment of the northeast treatment works will cost $7,000,000. New sewers to be built will cost $1,000,000.

Martin J. McLaughlin, public works director, said plans involving expenditure of between $2,000,000 and $3,000,000 are before the state sanitary water board for approval. McLaughlin said the work authorized is expected to get under way this month. The first project to be undertaken is the construction of three miles of collecting sewers at a cost of $750,000. These will carry the sewage from Torresdale to the disposal plant at Wheatsheaf Lane and Richmond Street.

Dallas voters approve $40,000,000 bond issue

Dallas, Tex., voters recently approved a $40,000,000 bond issue to provide funds for 17 classes of civic improvements to be constructed in the next 10 years. These include $10,000,000 for schools; $7,000,000 for a municipal auditorium and site; $2,900,000 for waterworks improvements; $2,800,000 for storm sewers; $2,500,000 for public parks and playgrounds; $2,500,000 for a new city hall and site; $2,100,000 for sanitary sewers; $2,000,000 for state fair livestock coliseum; $1,500,000 for public market and sites; $1,450,000 for new fire stations and equipment; $1,275,000 for street openings and widenings; $1,000,000 for a new public library; $1,000,000 for airports; and $1,000,000 for street paving.

The bond issue is part of a long-range master plan for Dallas prepared by Harland Bartholomew of St. Louis, Mo. An exact schedule for the construction of the projects embodied has not been made because the projects will be constructed in the next ten years in the order warranted by conditions affecting their construction.

Toledo, Ohio, approves new building code

The Toledo, Ohio, city council has enacted a standard municipal building code, effective Jan. 1, following almost two years of preparation by a special committee. The new code replaces 1919 regulations and the scattered series of ordinances enacted since that time to regulate construction.

Building permit fee increases on a sliding scale are provided. Under the old plan, a charge of $2 was made for the first part of any $1,000 application and $1 for each additional $1,000 up to $100,000. The new plan provides for a fee of $2 on a valuation of $500 or less, and $1.50 for each additional $1,000 or fraction thereof, up to $25,000. Above this amount, an added dollar would be charged for each $1,000 of valuation up to $100,000. For buildings estimated at more than $100,000, an additional charge of 50 cents per $1,000 will be made.

Rooftop parking

Rooftop parking facilities for customers of Sears, Roebuck & Co., at Portland, Ore., are a feature of an $1,000,000 expansion program now under way.

Plans prepared by Ertz, Portland architects, provide for a 240 x 150-ft., 1-story-and-basement sales addition with parking space on the roof.

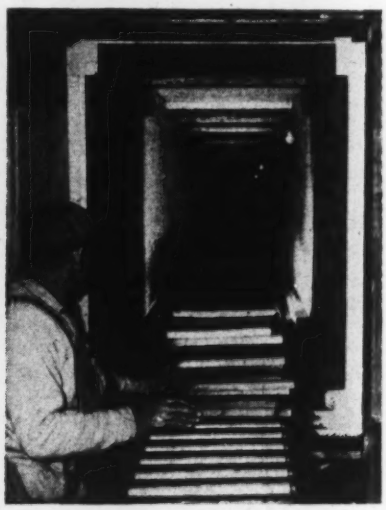
A research laboratory started by Goodrich

Contractors for the B. F. Goodrich Co., Akron, Ohio, broke ground last week for construction of a $2,000,500 research center near Brecksville, Ohio.

The research laboratories will be erected on a 260-acre tract. Present plans call for five separate, completely air-conditioned buildings, built of gray brick. The building site was chosen primarily because of its freedom from dust, cross country electric lines, vibration and noise.

The main research laboratory and headquarters for basic research will be a T-shaped building, 202 ft. by 172 ft., three stories high. It will include 81 individual laboratories, a cafeteria and dining room, an assembly room with seating capacity for 250, and an extensive technical library.

The second building, also three stories, will house physical testing, chemical engineering research, shops, receiving and store rooms, and necessary power units. A special "high pressure" building, equipped with barricades and instruments for safety, will also be provided.



Engineered moving job leaves street traffic free

The problem of moving five floors of household crockery goods to a five story building across the street was met recently by a Portland, Ore., firm which called in a structural engineer and completed the move at one-third normal cost and without interference with street traffic.

The company purchased a building across the street from its former location. The five floors of the new structure (at right in photo above) were slightly lower than those of the former quarters.

The engineer, J. A. McDevitt, designed, and the Wegman and Sons Const. Co. built a plywood, boxed-in bridge that spanned the street. The bridge consisted of ¾-in. plywood, 4 ft. high and 2 ft. 9 in. wide with built-up framing members that enabled the span to tolerate weights up to 3,000 pounds. Boxes of merchandise were merely rolled from the old building into the new, and as each floor was emptied, the bridge was lowered to the next floor.

The span was installed by sliding it out of a window and hoisting to place by means of cables mounted on gin poles placed on the top floors of the two buildings. Six men were able to handle the moving operation without difficulty and with considerable speed.

OBITUARY

A. F. Fischer, 59, died in Iowa City, Iowa, Dec. 17. A civil engineering graduate of the State University of Iowa, 1911, from 1913 to 1924, he was engineer of Johnson County. He was a past president of the Iowa Engineering Society.

Albion K. Vickery, 73, city engineer of Denver, Colo. for 23 years, died Dec. 26. Mr. Vickery, who became assistant city engineer in 1901, and twelve years later city engineer, also directed construction of the Jones Pass tunnel through the continental divide, and assisted in planning construction of Denver's city hall.

Joseph Q. Adams, 62, died in Centerville, Iowa, Dec. 29. He was graduated from the college of engineering, State University of Iowa, in 1909. In the first world war, he was a 1st lieutenant of the 29th Engineers. In 1927, he entered the engineering department of the Iowa Southern Utilities Co.

Harry A. Schenck, 56, engineer in charge of the original surveys locating the position of Boulder Dam, died in Los Angeles, Calif., Jan. 1. From 1912 to 1923, he was chief of surveyors for the Southern California Edison Co., and in 1924 went into private practice as a specialist in subdivisions and municipal improvement work.

John A. Butler, 57, engineer with the Highland Park, Ill., water department for 28 years, died Jan. 3.

Arthur Schueremann, 51, civil engineer in the office of the Illinois state architect, Springfield, Ill., died Jan. 2.

Louis A. Mitchell, 68, civil engineer with the Indiana State Highway Department, died Jan. 3. He served as chief engineer with the former Union Traction Co., Anderson, Ind., for 25 years, until he went to Indianapolis in 1941, where he entered the engineering department of the Allison division of General Motors, later becoming associated with the Indiana Highways Department.

George D. MacDougall, 72, died Dec. 30, at New Glasgow, N. S. He was chief engineer with Trenton Industries, Trenton, N. S. Previously, he had been chief engineer of the Nova Scotia Steel & Coal Co., New Glasgow, and of the British Empire Steel & Coal Corp., Sydney. He had also been in engineering work at Boston, Mass., Buffalo, N. Y., and in Ontario and Newfoundland.

G. C. Dobson, 64, died in Tulsa, Okla., Dec. 29. He was a civil engineering graduate of the University of Missouri. From July 1910, to February 1916, he worked on the Panama Canal. In 1943, he retired as acting chief, Sedimentation Section, Soil Conservation Service, Washington, D. C.

Elliot C. Brown, 63, of Greenwich, Conn., head of the Elliot C. Brown Co., New York engineering and contracting firm, died Jan. 9. A civil engineering graduate of Princeton University, 1904, Mr. Brown started his career as an assistant engineer for the New York Central Railroad, was an instructor in engineering at Princeton, and in 1909 organized his own company.

Frederick D. Mensing, 66, president of Mensing and Co., Philadelphia, Pa., for 30 years a consulting engineer, died Dec. 27. He began in 1905 with the Bell Telephone Co. During the first world war he was on special work with the Atlas Powder Co., Perryville, Md., and during the last war was production engineer with the Philadelphia Ordnance District.

William N. Jackson, 57, with the building firm of Matthew H. McCloskey, Jr., Philadelphia. Pa., for the past 18 years, died Dec. 31. He worked on the construction of Convention Hall and the Federal Building in Philadelphia, and the Pentagon and Social Security Buildings in Washington. Latterly he was assistant construction superintendent of the Hooker's Point Shipyard, Tampa, Fla.

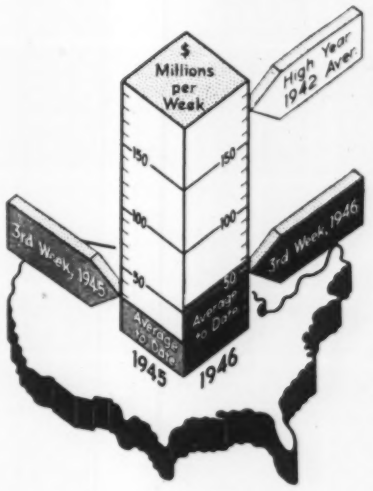
Emanuel W. Kun, 57, a civil engineer and superintendent of maintenance for Albert M. Greenfield and Co., Philadelphia, Pa., died Jan. 6. He was with the Keystone State Construction Co. during the building of the Broad St. subway.

Samuel T. Hudson, 78, president of the J. E. Brenneman Co., engineering contractors, Philadelphia, Pa., died Jan. 5. He was with the company 55 years and was president since 1920.

Spencer, Miller, 72, a Philadelphia, Pa., civil engineer died Dec. 28. He was a graduate of Swarthmore College.

Arthur Loforth, 73, assistant engineer of the Nevada State Highway Department, died Jan. 4 in Las Vegas. During the first world war he served overseas with the 91st "Pine Tree" division. In 1920 he joined the state highway department and for many years was division engineer at Reno.

CONSTRUCTION ACTIVITY



As Reported this week to ... *Engineering News-Record*

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of Jan. 17 1946	Cumulative 1946 (3 wk.)	Cumulative 1945 (3 wk.)
Federal	$3,774	$13,452	$35,650
State & Mun.	11,213	42,521	13,966
Total Public	$14,987	$55,973	$49,616
Total Private	30,394	120,674	29,786
U. S. Total	**$45,381**	**$176,647**	**$79,402**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Type of Work	Dollar Volume (Thousands) This Week	Cumulative 1946 (3 wk.)	Cumulative 1945 (3 wk.)
Waterworks	$1,976	$2,681	$3,178
Sewerage	375	1,972	1,913
Bridges	1,310	6,359	3,378
Highways	5,352	18,846	7,804
Earthwork, Waterways	681	3,961	909
Buildings, Public	2,111	15,245	20,177
Industrial	17,517	50,041	23,145
Commercial	12,553	66,067	2,409
Unclassified	3,506	11,475	16,489

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1946 (3 wk.)	Cumulative 1945 (3 wk.)
NON-FEDERAL	$42,462	$23,663
Corporate Securities	33,311	1,270
State and Municipal	9,151	22,393
RFC Loans	.....	.....
REA Loans	.....	.....
Fed. Aid Highway	.....	.....
FEDERAL	.....	77,137
Total Capital	$42,462	$100,800

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Jan. '46	316.32	152.05
Building Cost	Jan. '46	242.23	130.94
Volume	Dec. '45	163	71

CONSTRUCTION REPORTS

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ELSIE EAVES, Manager *DARWIN R. DAY, Statistics* *J. A. MAHONEY, Reports*

(Daily service also available—Write for details)

WATER SUPPLY

BIDS ASKED

Bids Asked January 22

N. C., Sanford—Town, Town Hall, repairing earth dam at WW plant, constructing concrete apron and freeboard, channel excav., riprapping and sodding of banks. Plans deposit $15. L. E. Wooten, Odd Fellows Bldg., Raleigh, engr. CD 11/21—ENR 12/13.

Bids Asked January 25

†Calif., San Diego—Navy Pub. Wks. Office, San Diego, installing water, steam and air services for Piers 6 and 8, Reserve Fleet Berthing Facilities, exten. to city's 16 in. high pressure main, boiler house, etc. Over $15,000. Plans deposit $10.

Bids Asked January 29

N. Y., New York—Bd. Water Supply, 120 Wall St., rubber lined and covered chlorine solution pipes for Rondout, West Branch and Kensico South effluent chambers, Delaware Aqueduct, Contr. 368. Plans deposit $5; adv. ENR 1/17.

★ **Wyo., Laramie**—City, 20 mi. water supply line, alternate bids on steel, concrete and transite pipe, incl. 8,800 lin. ft. 36 in., 100,000 lin. ft. 20 in. and 1,300 lin. ft. 20 in. c.i. pipe without alternate, incl. all necessary structures. $600,000-$700,000. J. T. Baner, Laramie, engr.

Bids Asked January 31

Pa., Phila.—City Dpt. P. Wks., City Hall Annex, Lardners Point Pump. Station addns., WW 1-200. Over $250,000.

Bids Asked February 19

Wash., Ritzville—City, City Hall, 1 m.g. rein.-con. reservoir. $60,000. Plans deposit $25. DeWitt Griffin & Associates, Old Natl. Bank Bldg., Spokane, engrs. CD 10/10—ENR 11/1.

LOW BIDDERS

†Calif., Oakland—U. S. Eng., 74 New Montgomery St., San Francisco, 16 in. pipeline crossing at Camp John T. Knight, Spec. 2335, from E. T. Hass Co., Box 411, San Mateo. **$26,448.** CD 12/24.

Calif., Pittsburg—City, City Hall, water filtration plant addn., from Pacific Pipe Line Constr. Co., 2128 San Pablo Ave., El Cerrito. **$23,955.** E. L. O'Hara, City Hall, city engr. CD 10/11—ENR 11/2.

Calif., San Pablo—East Bay Municipal Utility Dist., 512 16 St., Oakland, extending filter plant, from F. J. Early Jr., 369 Pine St., San Francisco. **$136,578.** CD 10/25.

Conn., Hartford—Hartford Metropolitan Dist., Water Bureau, Bd. Contr. & Supply, 650 Main St., Jan. 7, 36 in. watermains, Brown St., from F. B. O'Neil, 22 Preston St. **$114,155.** CD 12/18—ENR 12/20.

O., Spencer—Village, K. D. Firestone, Spencer, received no bids Jan. 4, water plant and sys., incl. dam, overhead tank, distr. sys. and complete treatment plant. **$115,000.** P. W. Elwell, 5005 Euclid Ave., Cleveland, engr. CD 12/28.

Ont., Paisley—Village, E. D. Elves, clk., watermains, hydrants, valves, etc., from Mohan Constr. Co., 9 Pharmacy Ave., Toronto. **$58,500.** CD 9/13—ENR 9/27.

CONTRACTS AWARDED

N. Y., Jamestown—Fairchild Engine & Airplane Corp., Jamestown, 100 ft. tower and tank, water supply lines, etc., at plant, N. Main St. exten., to Moon Welding & Mache Co., Kokomo, Ind. Est. **$40,000.** Beck & Tinkham, Bailey Bldg., archts. CD 11/12—ENR 11/29.

N. C., Hickory—City, W. Lyerly, mayor, City Hall, WW imprvs., filter plant addn., to V. R. Higgins Co., Greensboro, **$161,940*****water mains, and tank foundations, piping, to Blythe Bros. Co., 424 S. Brevard St., Charlotte, **$164,712** and **$21,660** respectively ***raw water pump and clear water pump, to DeLaval Steam Turbine Co., 853 Nottingham Way, Trenton, N. J., **$2,988** and **$3,365** respectively; 1 m.g. overhead tank, to Chicago Bridge & Iron Co., 1500 N. 50 St., Birmingham, Ala., **$75,000.** Grand total $429,665. Bids 1/8. CD 12/5—ENR 12/13.

N. C., Raleigh—City, G. Andrews, mayor, 9,000 ft. pipe for water facilities in Hillsboro St., to Glamorgan Pipe & Foundry Co., Lynchburg, Va., **$18,540.** Bids 11/21. CD 10/30—ENR 11/1.

O., Elyria—City, I. Faxon, service dir., City Hall, watermain distr. sys., with 24 in. iron main from elevated tank to new General Motors (Brown-Lipe-Chapin) plant, to M. Faton, 3553 E. 103 St., Cleveland. **$140,890.** Est. $150,000. CD 12/11—ENR 12/13.

Symbols and Abbreviations Include:

★ Federal Government
Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Ore., Aloha — Aloha Huber Water Dist., Aloha, 35 mi. water lines, to Eugene Ruedy Co., 2919 N.W. Nicolai St., Portland. **$198,566.** CD 12/27—ENR 1/3, under LB.

Ore., Portland—City, City Hall, 4,410 ft., 12 in. c.i. and 750 ft. 12 in. steel watermains in 6 and S.W. 10 Aves., Barbour and Terwilliger Blvds., day labor. **$28,750.** B. S Morrow, city engr.

Pa., Lansdale—Lansdale Municipal Auth., C. R. Redington, supt., 2 and Chestnut Sts., water pipeline, own forces. **$17,000.** C. Haydock, 16 S. Broad St., Phila., engr. CD 12/28—ENR 1/10.

★ **Pa., Lebanon**—Mayor and City Council, City Hall, reservoir, dam appurtenances at High Bridge, to Kingston Constr. Corp., Shenandoah. **$640,637.** CD 11/28—ENR 12/6.

Pa., Warwick—Duquesne Light Co., 435 6th Ave., Pittsburgh, water treating plant, to Fairchance Lumber Co., Fairchance, **$28,000.** Awarded 1/2.

Tex., Orange—**N. A. Goodale and W. E. Montgomery**, Orange, c.i. water lines, sanitary sewer lines, street asphalt paving and grading, grading, drainage for housing area, own forces. **$95,000.** CD 11/16—ENR 11/29, under Commercial Bldgs.

Wash., Lynden—City, City Hall, 200,000 gal. steel tank and tower, to Pittsburgh-Des Moines Steel Co., 1015 Tuttle St., Des Moines, Ia. **$26,475.** Bids 1/7. CD 11/28—ENR 12/6.

Wash., Seattle—City, County-City Bldg., 3 and James Sts., Zone 4, cleaning and cement relining 32 in. steel pipe on Roosevelt Way, etc., to American Pipe & Constr. Co., 518 N.E. Columbia Blvd., Portland, Ore. **$38,395.** Bids 1/3. C. L. Wartelle, City Hall, city engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Bids Asked January 23

N. Y., Kew Gardens—President Queens Boro, 120-55 Queens Blvd., Zone 15, reconstructing force main in 24 Rd. from pump. station 160 ft. east of 160 St. to 163 St., and in 163 St.; reconstructing sewer, appurtenances in 69 Pl.

Bids Asked January 30

Calif., San Francisco—Dpt. P. Wks., City Hall, rein.-con. sewer in Upper Army St., Section A. Over $25,000. Plans deposit $10. R. Wadsworth, City Hall, city engr. CD 11/15/44—ENR 11/30/44, under Postwar Projects.

Ont., Forest Hill—Owner, c/o L. W. Archer, clk., Forest Hill, 22,250 lineal ft. 48 and 70 in. sewers. $450,000. Plans deposit $10. N. MacNicol, Forest Hill, engr. CD 1/4.

Bids Asked January 31

N. J., Point Pleasant Beach—Mayor and Council of Borough of Point Pleasant Beach, Boro Hall, approx. 1,200 ft. 12 in. extra heavy wrought iron sewer outfall line extending 1,000 ft. into Atlantic Ocean with valve control manhole and appurtenances, foot Central Ave. Plans deposit $3. H. O. Uhden, Railroad Square, boro engr.; adv. ENR 1/17.

Bids Asked February 13

Mass., Quincy—Metropolitan Dist. Water Supply Comn., 20 Somerset St., Boston, Contr. 141, furnishing, del. sewage pumps, gas and dual fuel engines, generators and blowers for Nut Island Sewage Treatment Plant, of South Metropolitan Sewerage Dist. Plans deposit $10. K. R. Kennison, ch. engr.; adv. ENR 1/17.

LOW BIDDERS

★ **Calif., Los Angeles**—City, City Hall, Jan. 9, Hyperian outfall sewer, from Guy F. Atkinson Co., Heartwell Bldg., Long Beach. **$3,517,410.** CD 12/5—ENR 12/13.

O., Elyria—City, I. Faxon, serv. dir., City Hall, rejected bids Jan. 8, storm and sanitary sewers for new General Motors (Brown Lipe Chapin) plant. **$150,000.** Havens & Emerson, Leader Bldg., Cleveland, engrs. CD 11/20—ENR 12/13.

Tex., Dallas—City, E. Goforth, secy., Dallas, Jan. 9, storm sewer imprvs., in Sharon lateral of Jim Town Fork from Marlborough to Franklin, from Williams & Whittle, 5422 Mockingbird Lane. **$178,752.** CD 12/24.

Wis., Milwaukee—City, Jan. 7, sanitary sewer in S. Allis St., from Old Constr. Co., 802 E. Center St. **$46,109.** Est. $37,000. CD 12/3—ENR 12/9/43, under Postwar Projects.

BRIDGES

BIDS ASKED

Bids Asked January 22

North Carolina—State Hy. and P. Wks. Comn., Raleigh, structures 8 mi., from point approx. 4 mi. east of Burgaw to Jacksonville, Proj. 3814, Pender Co., $50,000-$75,000; bridges over Alligator Creek and Brunswick River, on U. S. Rt. 17, 74, 76, Proj. 3123, Brunswick Co., $125,000-$150,000; structures 6.294 mi. on N.C. Rt. 53, from point approx. 13 mi. east of Burgaw toward Jacksonville, Proj. 3815, Pender Co., $15,000-$25,000. W. V. Baise, Raleigh, engr.

Bids Asked January 25

Alabama—State Hy. Dpt., Mobile, 0.03 mi. bridge over Hutton Creek, Randolph Co.; 0.4 mi. bridge, approaches over Catoma Creek on Old Selma Rd., Montgomery Co.; 0.5 mi. overpass at Lineville, Clay Co. CD 11/9—ENR 11/29.

Bids Asked January 31

Pennsylvania—State Dpt. Hys., Harrisburg, pony truss superstructure on existing abutments and plate girder superstructure on existing abutments, bituminous surfacing 1,386 ft., Route Leg. Rt. 19067, Sect. 3-A, Fishing Creek Twp., Columbia Co. J. L. Herber, ch. engr.

Bids Asked February 7

California—State Div. Hys., 808 State Bldg., Los Angeles, structural steel, concrete overcrossing on Terminal Island Freeway over Union Pacific R.R. tracks, Los Angeles Co. G. T. McCoy, state hy. engr.

Bids Asked February 8

★ **Minnesota**—State Hy. Dpt., St. Paul, replacing bridge with 600 ft. steel, concrete bridge, 60 ft. roadway, over Great Northern and Minneapolis, and St. Louis R.R. tracks, 7 St. N., Minneapolis. $500,000. E. J. Miller, bridge engr. CD 11/24/43—ENR 12/2/43, under Postwar Projects.